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ABSTRACT

This booklet describes graduate medical education (GME) in the United States and outlines some options for future policy related to GME. GME is the process of providing academic and clinical education to physicians after they have graduated from an accredited medical school. GME typically occurs in teaching hospitals or other health care settings. GME may take 3 to 8 years, depending on the specialty selected. In the United States, the growth of GME can be attributed in large part to the increasing number of residency positions occupied by international medical graduates. Increased competition within local and regional health care markets and the continued growth of managed care systems are producing profound changes in health care. These trends and other changes anticipated for the health care professions have resulted in some suggestions for options for future GME public policy. Some of these options are: (1) strengthen efforts to forecast and distribute data on physician supply and demand; (2) institute mechanisms and incentives for holding recipients of public GME subsidies more accountable for producing needed goods; (3) develop a more stable and equitable means of financing GME through the creation of an all-payer GME fund; and (4) assure adequate funding to support innovative physician training in nonhospital and medically underserved settings. (Contains 7 tables and 15 references.) (SLD)

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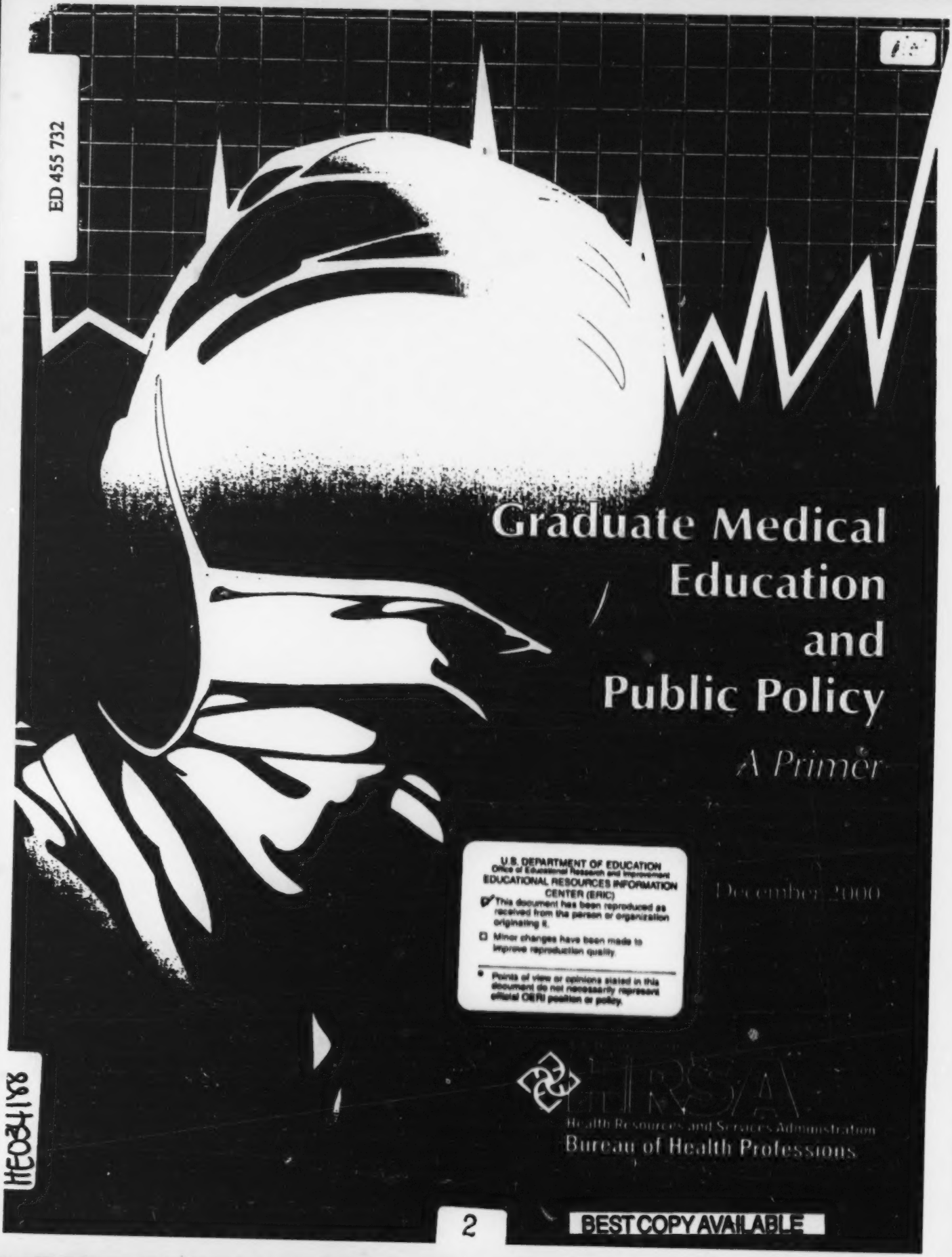

Graduate Medical Education and Public Policy

A Primer

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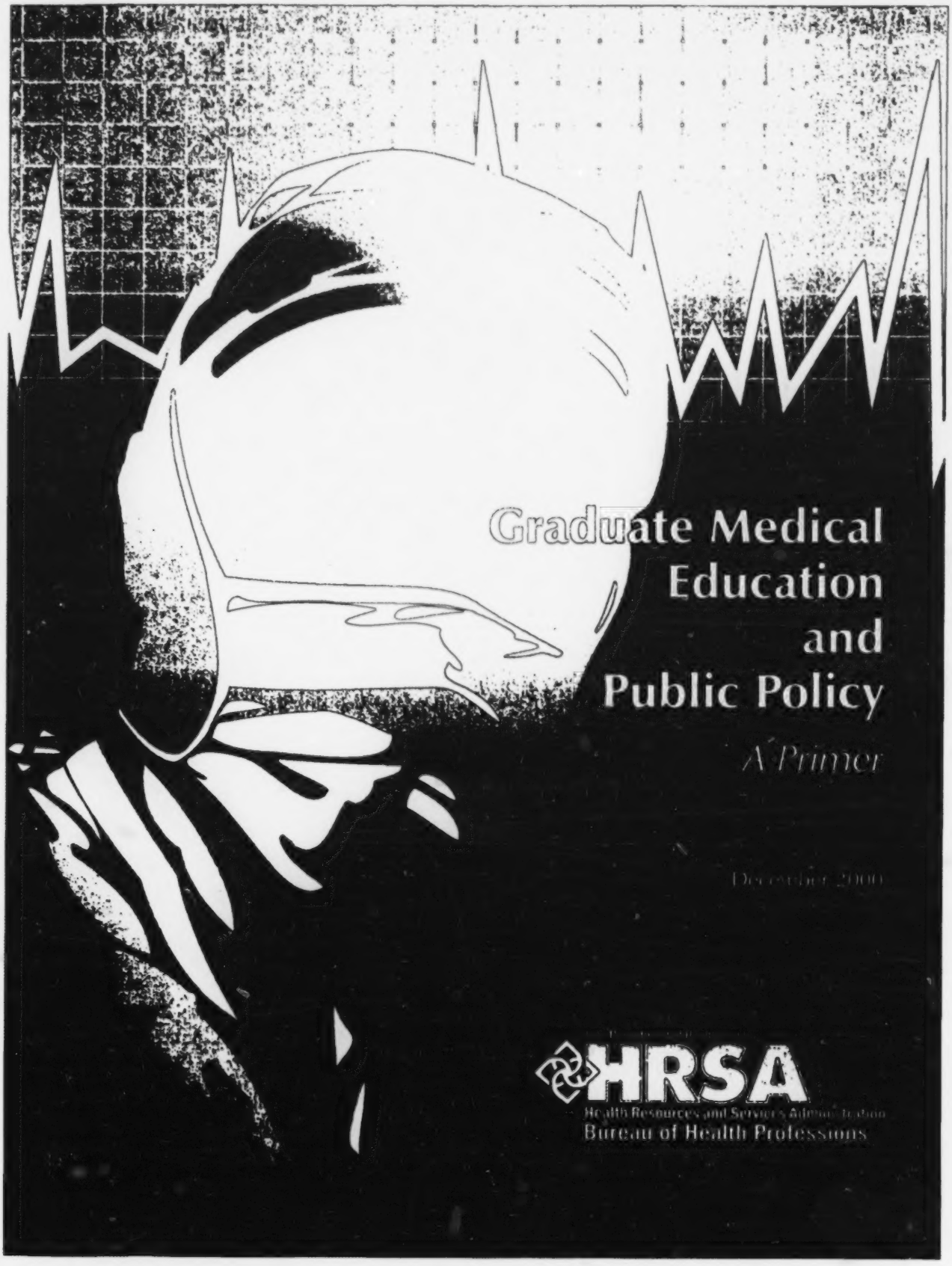

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OVERVIEW OF GRADUATE MEDICAL EDUCATION

The training of physicians in the United States has evolved into a systematic and complex process. At the beginning of the twentieth century, a model was established for American medical education. It consisted of the student preparing for medical practice in the following order: 1) a baccalaureate or advanced degree program providing for study of the basic medical sciences leading to training in medicine; 2) a university-based medical school for undergraduate medical education; and 3) direct clinical experience in graduate medical education.

Today, this process of education and training to become a physician takes many years — four years of undergraduate school, four years of medical school, and three to eight years of graduate training, depending on the specialty selected. A few medical schools offer a combined undergraduate and medical school program that lasts six years instead of the customary eight years.

Premedical students must complete undergraduate work in physics, biology, mathematics, English, and inorganic and organic chemistry. Students take courses in the humanities and the social sciences as well; some also volunteer at local hospitals or clinics to gain practical experience in the health professions. The minimum educational requirement for entry to medical school is three years of college. Most applicants, however, have at least a bachelor's degree, and many have advanced degrees.

Upon completion of their undergraduate medical education, physicians obtain their doctorate of medicine (M.D.) or osteopathy (D.O.) degree[1] and are eligible in most states to receive a license and practice general medicine after just one year of post-graduate training.[2] The vast majority of these physicians, however, go on to receive a full course of graduate training before they begin medical practice.

Simply stated, graduate medical education (GME) is the process for providing academic and clinical education to physicians after they have graduated from an accredited medical school.[3] GME typically occurs in teaching hospitals or other health care settings, which provide the clinical setting for

[1] Undergraduate medical education is the education that students receive during four years of medical school. There are two types of medical training schools in this country Allopathic schools, which graduate doctors of medicine (M.D.s), are the more common medical education institution. All told, there are 125 such schools in the United States, enrolling more than 66,000 students. In addition, there are 19 schools of osteopathic medicine with enrollment now exceeding 9,000 students. Osteopathic medicine is a distinctive form of medical care founded in the late 1800s on the philosophy that all body systems are interrelated and dependent upon one another for good health. Osteopathic physicians (D.O.s) use all the tools available to allopathic physicians including prescription medicine and surgery. When appropriate, they also incorporate osteopathic manipulative treatment — a set of manual medicine techniques that may be used to relieve pain, restore range of motion, and enhance the body's capacity to heal — into their regimen of patient care. Both forms of medical training graduate about 18,000 students annually. The ratio of students applying to medical school to those accepted is about 2.5 to 1.

[2] All States, the District of Columbia, and U.S. territories license physicians. To be licensed, physicians must graduate from an accredited medical school, pass a licensing examination, and complete 1 to 8 years of graduate training. Although physicians licensed in one state can usually get a license to practice in another without further examination, some states limit reciprocity. Graduates of foreign medical schools can usually qualify for licensure after passing an examination and completing a three-year U.S. residency.

[3] For purposes of this paper, graduate medical education will refer only to the training of physicians and does not include a discussion of advanced training of nurses, dentists or pharmacists.

the advanced training of physicians. Most of these institutions are tertiary care hospitals that provide highly advanced and complex levels of treatment. These hospitals also usually care for a high proportion of poor and uninsured patients, engage in clinical research, and provide specialized services.

Graduate medical education is the phase that the physician resident acquires training as a clinician in a designated area of specialization. (The next section provides further information on specialty training.) This clinical training, as well as the patient care that residents provide, is supervised by a teaching physician. Supervising physicians train and oversee residents by providing classroom discussion, making rounds in the hospital wards and clinics with residents, examining specific patients, and discussing courses of treatment.

The first year of a physician's residency training is often referred to as an internship. This is followed by the core period of residency training. Finally, many residents choose to enter fellowships which sometimes refer to post-residency instruction leading to advanced training or sub-specialization (e.g., pediatric oncology). The overall length of a residency varies according to the chosen specialty, but typically graduate medical education requires three to eight years to complete. Generally, the more complex the specialty, the longer the residency program.

HISTORY OF MEDICAL SPECIALIZATION

Medical specialization became a noticeable trend for the first time in the mid-1800s with the desire by surgeons to distinguish themselves from their fellow general practitioners. Surgeons were the first physicians to set the stage for future specialties by establishing a principle that advanced credentials should be based on a formal education process.

The first formal physician residency program, then just a one-year internship, was established at Johns Hopkins Hospital in Baltimore in 1889. This program became the model other institutions would use in creating programs of medical specialization. In 1913, the American College of Surgeons created the first formal GME requirement for specialization, shortly followed by the American Medical Association's creation of a list of approved internships or "graduate medical schools." By the 1920s, the internship had become an accepted part of preparation for general medical practice. While these changes spawned the creation of a wide range of specialties, specialty training beyond the internship was largely unregulated and disparate. In 1933, the American Board of Medical Specialties was born to provide assurance as to the quality of the training of a burgeoning number of medical specialties. The rapid rise of specialization took place after World War II, when during the 1940s the number of available residency positions more than tripled from 5,118 to 18,669. This is the time when many practicing physicians, returning from the war, began choosing further specialization over general practice *(Donini-Lenhoff, 2000)*.

The Liaison Committee on Graduate Medical Education (LCGME) was established in the early 1970s to provide overall accreditation of the various residency programs. In 1981, LCGME evolved into the Accreditation Council for Graduate Medical Education that currently regulates nearly 7,700 (almost all) allopathic (M.D. related) residency programs in 103 specialties and subspecialties. The American Osteopathic Association's Bureau of Professional Education and Council on

Post-Doctoral Training credential osteopathic graduate training programs.[4] More than 90 percent of all GME programs are affiliated with a medical school.

Today, physicians are trained with special skills either as generalists or specialists. Those trained in disciplines such as general internal medicine, family practice or general pediatrics are considered to be generalists and tend to serve as patients' primary care physicians. These practitioners deal comprehensively with the undifferentiated problems their patients present and are usually the first health care professionals patients consult.

Sub-specialists receive advanced training in a specialty, such as thoracic surgery, that allows them to care for patients referred to them with complex conditions requiring their particular expertise.[5]

RECENT TRENDS

Most medical school graduates are paired with residency programs to begin GME by a complicated national residency match process. The "Match", as it is referred to, is a computerized process whereby each medical student submits her or his top residency program choices and each residency submits its top student selections. Students are then paired with individual residency programs based on the preferences of each. The 2000 match placed about 20,000 GME applicants in over 3,700 residency programs at 701 teaching hospitals throughout the country. Allopathic and osteopathic medical students typically participate in two separate match processes; some osteopathic physicians, however, participate in the allopathic match and receive training in allopathic residencies.

The number of allopathic physicians in graduate medical education rose steadily until the mid-1990s, at which point annual numbers have remained constant at between 97,000 and 98,000.[6] *(Table 1)* The earlier rise in GME enrollment is generally believed to be due to three factors. First, physicians in residency training are an important source of financial support for hospitals through the current means and incentives of payment of the federal government. Also, residents on average remain in training for a longer period than they once did.

Finally, the growth of GME can be attributed in large part to the increasing number of residency positions occupied by international medical graduates (IMGs). *(Table 2)* While the number of U.S. trained medical graduates (USMGs) has remained stable since the early 1980s, the number of foreign-born IMGs in residency training rose sharply until recently when their numbers have stabilized. Many IMGs are permanent U.S. citizens and remain in this country. Likewise, many IMGs with temporary visas who usually return home when visas expire ultimately return to the U.S. and permanently add to the size of the physician workforce.

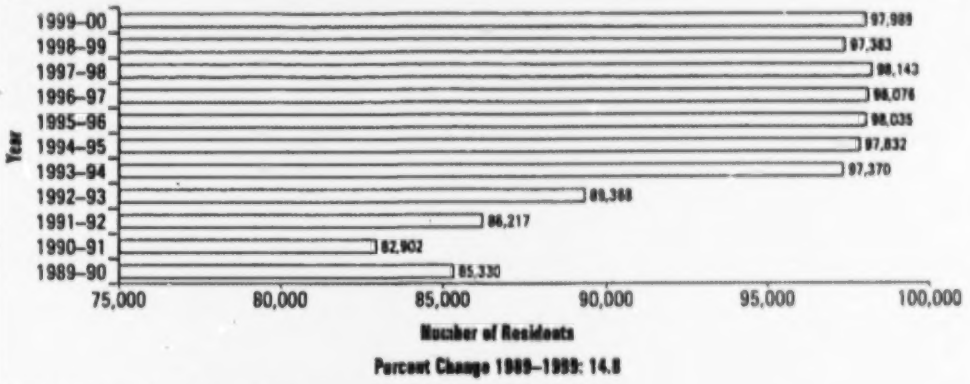
[4] According to the American Association of Colleges of Osteopathic Medicine, there were 231 internship programs for D.O.s accredited by the American Osteopathic Association (AOA) in 1998–1999.

[5] A final examination immediately after residency, or after 1 or 2 years of practice, is necessary for board certification by LCGME or the American Osteopathic Association. This requirement applies to both residents in general (primary care) as well as subspecialty training.

[6] The small decline in allopathic residents in the last few years has been offset by growth in the number of osteopathic residents. An estimated 6,000 D.O.s were in residency training programs in 1998–1999. Of these, about 61 percent were in allopathic (ACGME-accredited) programs. Concomitant with the rise in the number of AOA-approved training programs in recent years has been a gradual increase in the number of D.O. residents.

TABLE 1

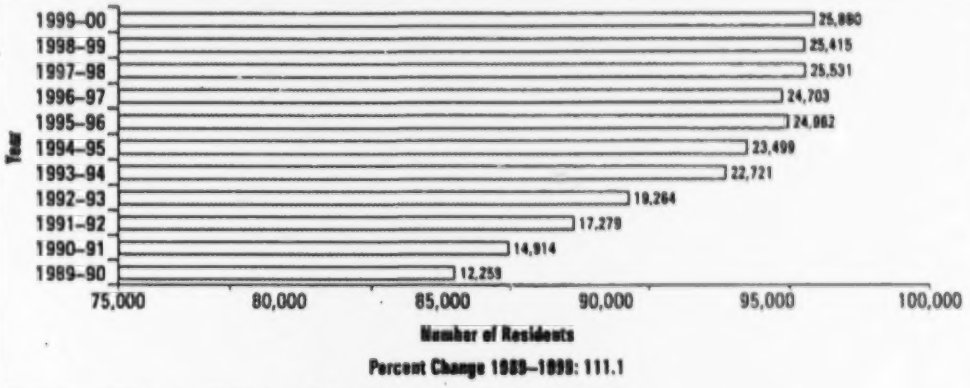
Total Allopathic Residents, 1989–1999



Source: *Journal of the American Medical Association*, Annual Medical Education Issues, 1990–2000.

TABLE 2

International Medical Graduate Allopathic Residents, 1989–1999



Source: *Journal of the American Medical Association*, Annual Medical Education Issues, 1990–2000.

The increase of IMGs in residency training programs has been generated primarily by the large number of foreign-born IMGs with temporary visas.

The number of allopathic residency programs and the size and composition of residents by specialty in 1999 are displayed in *Table 3*.[7]

[7] According to the American Association of Colleges of Osteopathic Medicine, the largest proportion of D.O.s in both AOA and ACGME-approved residencies choose to specialize in family practice. In 1998–1999, 37.5 percent of D.O. residents in AOA-approved programs chose family practice, followed by emergency medicine (12.4%) and internal medicine (10.5%). In the ACGME programs, family practice again was the most popular specialty for D.O.s (27.2%), followed by internal medicine (20.9%) and pediatrics (7.5%).

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TABLE 3

Resident Physicians in Allopathic Training, August 1999

Specialty	Total Number of Programs, August 1999	Total		% Female	Race or Ethnic Background					% USMGs	% IMGs	% Canadian	% Osteopathic
		Number	%		% White	% Black	% Hispanic	% Asian	% Other/ Unknown				
Allergy and immunology	73	209	0.2	44.0	40.2	1.4	5.3	29.7	23.4	53.6	42.1	1.9	1.4
Anesthesiology	134	3,837	3.9	28.6	48.7	4.2	5.5	24.5	17.1	42.4	53.5	0.5	3.1
Colon and rectal surgery	34	58	0.1	29.3	65.5	1.7	3.4	8.6	20.7	79.3	12.1	8.6	0.0
Dermatology	104	870	0.9	54.0	66.9	3.4	3.2	13.2	13.2	93.1	5.2	0.7	1.0
Emergency medicine	123	3,490	3.6	27.0	73.6	5.5	3.6	9.3	8.1	90.1	2.5	0.7	6.5
Family practice	502	10,533	10.7	47.0	65.4	7.4	6.3	11.7	9.2	75.0	15.2	0.2	9.3
Internal medicine	403	21,237	21.7	39.6	46.7	5.5	5.2	25.9	16.6	58.0	37.2	0.3	4.0
Medical genetics	45	65	0.1	50.8	58.5	3.1	4.6	3.1	30.8	61.5	35.4	0.0	1.5
Neurological surgery	94	805	0.8	9.6	66.6	4.0	3.0	12.5	13.9	90.7	8.4	0.6	0.2
Neurology	117	1,344	1.4	36.2	47.5	2.5	5.6	22.9	21.6	45.3	49.4	1.0	4.1
Nuclear medicine	69	132	0.1	24.2	40.2	2.3	3.8	30.3	23.5	46.2	48.5	1.5	1.5
Obstetrics and gynecology	256	4,710	4.8	67.2	64.4	11.1	5.7	9.8	9.0	88.3	7.5	0.0	3.9
Ophthalmology	127	1,369	1.4	29.3	57.7	2.2	4.3	18.3	17.5	86.4	9.8	1.4	2.1
Orthopedic surgery	155	2,744	2.8	7.8	73.4	3.7	2.4	7.9	12.6	97.3	2.0	0.1	0.5
Otolaryngology	103	1,113	1.1	17.8	67.8	3.8	2.1	14.4	11.9	97.4	1.9	0.1	0.6
Pathology — anatomical and clinical	160	2,264	2.3	46.9	54.5	2.7	4.3	26.5	12.9	48.5	48.5	0.4	1.9
Pediatrics	208	7,715	7.9	64.6	58.2	7.1	6.7	15.0	13.1	76.0	19.5	0.3	3.9
Physical medicine and rehabilitation	82	1,085	1.1	37.3	46.6	5.1	6.0	26.4	25.2	50.6	37.1	0.4	11.2
Plastic surgery	90	472	0.5	21.2	67.4	1.7	2.5	11.9	16.5	90.3	7.0	1.5	0.8
Preventive medicine	88	426	0.4	40.4	54.0	13.1	4.2	13.1	15.5	73.2	17.8	0.5	8.2
Psychiatry	185	4,469	4.6	49.0	54.5	5.6	6.1	20.5	13.3	52.1	42.9	0.8	3.8
Radiation oncology	76	440	0.4	28.0	50.7	4.3	3.0	23.6	18.4	78.9	18.2	0.0	1.8
Radiology — diagnostic	198	3,591	3.7	25.1	59.3	2.9	4.8	19.4	13.6	77.5	17.5	1.1	3.6
Surgery — general	257	7,748	7.9	21.2	62.9	5.5	4.6	15.1	11.8	84.4	13.7	0.3	1.3
Thoracic surgery	90	306	0.3	6.9	65.7	2.9	3.9	12.4	15.0	80.1	16.7	2.3	0.7
Urology	121	1,043	1.1	11.8	68.4	3.8	2.7	13.7	11.4	94.2	4.7	0.4	0.6
Transitional year	145	1,217	1.2	30.0	57.7	3.9	6.1	16.1	16.3	73.5	18.5	0.2	6.0
Combined specialties	231	2,168	2.2	43.6	65.9	7.7	3.0	13.1	10.6	86.8	9.6	0.2	3.0
TOTAL	**7,946**	**97,989**	**100.0**	**38.1**	**56.2**	**5.5**	**5.2**	**18.7**	**14.5**	**68.7**	**26.4**	**0.5**	**3.5**

Source: *Journal of the American Medical Association*, Appendix II: Tables 1 and 8, September 6, 2000, Vol. 284, No.9.

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U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, National Center for Health Workforce Information and Analysis

MAJOR COSTS AND REVENUES FOR GME

GME COSTS

The costs associated with the provision of graduate medical education derive from a number of sources. The direct costs of GME (DGME) typically include stipends and/or salaries of medical residents and supervising faculty, fringe benefits, malpractice insurance paid for each resident, and other administrative and overhead expenses such as maintenance and electricity. Most, but not all, of these expenses typically are paid by the teaching hospital or clinic employing or utilizing the resident. Usually, as the resident's post-graduate year in residency rises, so does his/her salary or stipend.

Indirect GME costs (IME) represent another significant, but much less easily defined, factor in resident training. In many cases, IME costs are difficult to quantify because they are associated with a teaching hospital's missions and case mix. Typically, these expenses are said to be related to the inefficiencies created by having residents in a service facility. Higher patient care costs are associated with such factors as increased diagnostic testing, more procedures performed, higher staff ratios, and a more difficult mix of patients with complex conditions that necessitate costly treatment regimes.[8]

Financial arrangements between teaching hospitals and medical schools that govern residency programs vary according to location, custom and mission. The lack of consistency in these arrangements makes it difficult to accurately and appropriately determine or allocate GME costs. For example, the costs associated with faculty supervision of residents at a given institution may be wholly assigned to the affiliated medical school. In another location, the same cost may be assigned to the teaching hospital through a contractual relationship. Some medical schools have argued that even under direct contractual arrangements, the contracts do not capture the complete educational cost to the school. Consequently, such inconsistencies in identifying and allocating GME costs have resulted in wide variations in per resident cost amounts reported across training institutions.

While residents represent a cost to teaching hospitals and their affiliated clinics, the health services that more experienced residents render help defray other costs that an institution would likely incur if they were not present. For example, a second or third year resident may work 80 hours a week at an annual salary of about $40,000. If that position were eliminated or did not exist, the service duties would often be performed by a higher paid, fully certified physician(s), or, at a minimum, a nurse practitioner or physician assistant. In either case, the hospital would bear a replacement cost in excess of employing the resident.

MAJOR GME REVENUES

Graduate medical education has largely been funded from patient care income of teaching hospitals and other training settings. Consequently, the general public plays a major role in financing GME through payment of insurance premiums and through payroll taxes. The federal government, under statute through the Medicare program, pays the largest portion of explicit

[8] These definitions of GME costs typify the fact that most graduate training is provided in hospital settings.

GME costs in the United States by directly reimbursing teaching hospitals its pro rata share of these costs.[9] These Medicare payments cover the direct and indirect costs of GME.

Medicaid is the second largest explicit contributor to paying GME costs as nearly all state Medicaid agencies voluntarily cover some or all GME related expenses. Remaining GME costs are financed by a variety of sources, including the federal Health Resources and Services Administration, U.S. Departments' of Veterans Affairs and Defense (depending on the location of the residency), state and local government appropriations, philanthropies, faculty practice plans[10], and other public and private third party payers' and self-pay client payments for patient care services.[11]

The contributions of private third party payers to GME usually are not specifically identified in these payments. Typically, these payment sources are part of the "bottom line" that most hospitals use to subsidize a wide variety of programs, including GME. In such cases, teaching hospitals historically have included GME costs in their higher charges and have been reimbursed for these charges by third party payers.

Some medical schools indicate that departmental practice plan funds are used to support resident programs at their affiliated teaching hospitals. Practice plan funding originates from the clinical practices of faculty physicians. Other medical schools note that they use state general funds earmarked for undergraduate medical education to support GME faculty costs *(Texas, 2000)*.

[9] Revenues from all GME payers represent substantial sources of income for most teaching hospitals.

[10] Faculty practice plans may be both a contributor and recipient of GME payments in certain settings.

[11] These payers' contributions to GME are detailed in the upcoming section, "The Importance of Public Financing for GME."

CURRENT CLIMATE FOR GRADUATE MEDICAL EDUCATION

The past decade has been witness to a number of changes in the United States health care system that have impacted or have the potential to significantly affect graduate medical education and physician supply. This section briefly describes the major changes and issues confronting graduate medical education and related public policy.

SIZE, MIX AND DISTRIBUTION OF THE PHYSICIAN WORKFORCE

The supply of physicians in the United States has grown rapidly for several decades, and numerous reports within the past decade have concluded that the physician growth rate is exceeding the growth rate of the general population. Although these reports suggest that the overall physician supply will exceed the number of physicians needed in the coming years, the nature and extent of any physician surplus continues to be debated. In recent years, growth in the physician supply has moderated; in 1998, about 577,000 physicians were actively practicing medicine.

Because of concerns that training and maintaining a surplus of physicians contributes to excessively high costs for the nation, the Council on Graduate Medical Education (COGME)[12] — the source of many of these reports — has called for a decrease in the total number of new physicians trained and an increase in the percent of physicians trained in the generalist specialties. To reduce the physician growth rate, COGME has recommended that the total number of physicians entering training not exceed the number of U.S. medical school graduates in 1993 plus 10 percent.

In response to concerns that shortages of generalist physicians were limiting access to basic medical services in many areas of the country — particularly rural and inner city communities — COGME also recommended in the mid-1990s that 50 percent of physicians entering practice choose generalist specialties.[13] More recently, COGME has found that progress has been made to increase the number of generalist physicians and estimates now that approximately 40 percent of residents are likely to train and practice as primary care physicians after residency training *(COGME, 14th Report)*. Currently, about a third of allopathic physicians — and more than half of osteopathic physicians — are educated in a primary care specialty. Although there was much greater emphasis placed on primary care training during the 1990s, resulting in an increase of graduates choosing primary care specialties, some argue

[12] The Council on Graduate Medical Education was authorized by Congress in 1986 to provide an ongoing assessment of physician workforce trends, training issues and financing policies, and to recommend appropriate Federal and private sector efforts to address identified needs. Since its establishment, the Council has issued numerous physician workforce goals and priorities for the nation. These priorities have been embodied in a series of reports by the Council.

[13] United States has suffered a persistent geographic maldistribution of physicians and other health care providers. About 47 million Americans, or about one in six, live in health provider shortage areas. Over 50 million people or 20 percent of the nation's population reside in rural areas, but only about nine percent of practicing U.S. physicians currently serve these communities. Those physicians choosing the disciplines of family practice, general internal medicine, and general pediatrics are most commonly known as generalists.

that this increase may not be sustained in the first decade of the twenty first century. In the late 1990s, the number of graduates deciding to go into primary care showed a small decline.

Other workforce experts argue that because the number of physicians in training has leveled off and is likely to decrease over the next few years, the effects of any physician oversupply will be alleviated. In fact, some predict that a physician shortage may exist because future physicians may be more likely to work fewer hours, retire earlier, have lower earnings, or have to practice in medically underserved areas. Consequently, many feel practice opportunities should be good in some rural and low-income areas, because some physicians find these areas unattractive due to lower earnings potential, isolation from medical colleagues, or other reasons. To address these predicted shortages, at least one expert has called for increasing medical school enrollment that favors admission of students from underserved areas and minorities who may be more likely to practice in needy communities *(Mullan, 2000)*.

THE CHANGING HEALTH CARE MARKET

Increased competition within local and regional health care markets and the continued growth of managed systems of care is producing profound changes. By 1998, only 14 percent of individuals covered under employer group health plans still received health care from conventional, fee-for-service plans. Concurrently, a high proportion of physician practices now have one or more contracts with a managed care plan.

The growth of managed care and reductions in hospital inpatient use have also helped to dramatically shift the volume of health services provided in inpatient institutions to ambulatory settings. Medical education has been slow, however, to adapt to these changes. Residents and students continue to receive a majority of their clinical training at teaching hospitals and academic medical centers that serve a disproportionate number of acute care patients. While the practice of most primary care physicians occurs in out-of-hospital community or managed care settings, generalist trainees may not receive adequate exposure to the types of conditions and treatment modalities that eventually confront them in practice.

Efforts to train more residents in ambulatory settings has generally been thwarted by insufficient financial incentives and payment policies that continue to reward training in hospitals. Although the system for accrediting graduate training programs has in recent years made progress in supporting education in ambulatory settings, challenges remain. COGME has recommended in its Fifteenth report that Medicare GME funding be allowed to cover more of the costs of training in non-hospital settings; this report (to be released in Fall 2000) examines the multiple issues associated with financing GME in out-of-hospital settings *(COGME, 15th Report)*.

Managed care and increased market competition also has spurred concern and forced adaptation by most teaching hospitals that train physician residents. These institutions tend to have higher costs that put them at a disadvantage with other hospitals competing for managed care contracts to deliver non-specialized services. In the past, most private payers have subsidized the educational and other missions of teaching hospitals through higher payments. Lower payments from

managed care plans have caused financial troubles for many larger teaching hospitals *(GAO, 2000)*. Medicaid managed care growth also has reduced Medicaid payments and revenues for those teaching hospitals serving a disproportionate share of low income patients. These institutions have traditionally depended upon these payments to support their charity care missions.[14]

Furthermore, teaching hospitals and other health care providers are facing financial pressures from reductions in Medicare and Medicaid payments included in the 1997 Balanced Budget Act (BBA) of Congress (Public Law 105-33) enacted as a result of federal budgetary concerns.[15] In combination, the BBA provisions — along with the new pressures of market competition — have led to a decline in the operating margins of most teaching hospitals.

CHANGING ROLE OF WOMEN AND UNDERREPRESENTED MINORITIES IN MEDICINE

Once considered largely a man's profession, the practice of medicine by women has risen dramatically in the past quarter century. In 1970, women represented just 8 percent of all physicians; by 2010, they are expected to comprise close to 30 percent of the total physician population *(COGME, 5th Report)*. In earlier years, women facing admission to medical school and residency training were thwarted by several barriers, including the expectation that they would enter a limited number of fields (mainly primary care) and that a certain proportion who chose to have families would cease practice either permanently or temporarily.

Some experts believe that future physician supply may be moderated by an increasing percent of women who choose to work either part time or on an irregular basis or find practice opportunities in rural or medically underserved areas to be unattractive.

Similar to women, the presence of minorities historically underrepresented in the medical profession has increased significantly. In the 1950s, the percentage of minorities graduating from U.S. medical schools was under 3 percent; by 1998, the proportion of minority graduates rose to just over 33 percent. However, more specifically, African Americans, Hispanics and Native Americans — about 25 percent of the population — accounted for less than 15 percent of medical school graduates in 1998, while Asians — approximately four percent of the population, comprise over 18 percent of graduates. (Several medical schools continued to restrict admissions of African Americans as late as the mid-1960s.) *(AAMC, 2000)*

Consequently, African American, Native American and Hispanic medical school graduates comprise just six percent of all U.S. practicing physicians *(AAMC, 2000)*. Although several efforts supported by public and private funds have been instituted to increase minority participation in medicine, challenges remain. Court rulings have weakened affirmative action

[14] The number of uninsured persons rose steadily in the 1990s to about 44 million in 1998. The Census Bureau reported that, in 1999, the number of uninsured dropped for the first time in at least 12 years. It is not clear what were the main reasons for this decline.

[15] The 1997 BBA and consequent federal legislation will be discussed in more detail in the section on federal financing of graduate medical education.

measures that many experts believe continue to be necessary to achieve equity. In California, a recent proposition prohibiting consideration of race and gender in education may have a significant impact on minority student entry into medical school. In total, these actions already appear to be having an impact. Between 1996 and 1997, there was a drop of seven percent in the number of new underrepresented minority entrants to U.S. medical schools *(COGME, 12th Report)*.

PRESENCE OF INTERNATIONAL MEDICAL GRADUATES

The rising number of international medical graduates in GME programs appears to have stabilized in recent years. While the increased number of IMG residents have been those with temporary visas, the recent growth of IMGs is largely reflective of the longer average period of graduate training for these residents compared to other residents[14] *(COGME, 14th Report)*.

Earlier efforts in the mid-1990s to limit the number of graduates entering the physician workforce coincided with interests to reduce the continued growth of IMGs in U.S. residencies. Various proposals called for reductions in Medicare payments to teaching hospitals for IMGs and revisions to temporary visa programs to help curtail the influx of foreign graduates.

What remains is an essential role for IMGs in both patient care and teaching in many teaching hospitals, particularly in the eastern United States. Furthermore, IMGs holding temporary visas are viewed by many state and local officials as critical prospects for addressing physician shortages in several rural and medically underserved communities.

INCREASED SUPPLY AND AUTONOMY OF NON-PHYSICIAN PRACTITIONERS

The past decade has found a dramatic increase in the supply of non-physician clinicians and the amount of health care they deliver that previously was provided principally by physicians. These non-physician clinicians (NPCs) include nurse practitioners, certified nurse midwives, physician assistants, optometrists, podiatrists and nurse anesthetists, as well as practitioners from "alternative" or "complementary" disciplines such as chiropractors, naturopaths, and practitioners of acupuncture.

These NPCs — many who traditionally were used as physician extenders — now typically operate with a new degree of practice autonomy as defined by changes in state laws and regulations. These are practitioners whose defined scope of practice often overlaps in varying degrees with physicians and may even compete with physicians. Nurse practitioners arguably are the best example of where these changes have shown the greatest impact. *(See "Case in Point" on the following page.)*

Many workforce experts believe that the growth in both supply and demand for NPCs, while presenting new opportunities for increased collaboration and interdisciplinary practice, is likely to dampen demand for physician services, particularly in managed care settings and from consumers seeking alternative or non-traditional forms of health care.

[14] IMGs in general have chosen to pursue graduate education in specialties requiring longer years of training.

CASE IN POINT

NURSE PRACTITIONERS

Nurse Practitioners (NPs) are an example of where the responsibilities of a NPC increasingly overlap and are generally viewed to complement the responsibilities of the principal care physician. NPs are registered nurses who have completed advanced training in primary care and other specialties. Functions performed by NPs typically include health assessment, physical examinations, management of minor acute and chronic illnesses, development and coordination of plans of care, patient education, and health promotion/disease prevention activities.

Based on the numbers of NPs already in the training pipeline, by 2005 there will be more nurse practitioners than family practice physicians in the United States. Not only are their numbers growing, but also the non-physician roles of NPs are expanding. In most states, autonomy from physician supervision, prescriptive privileges, scope of practice and reimbursement levels are all increasing for nurse practitioners. In particular, every state now provides NPs some level of independent pharmaceutical prescribing authority, ranging from total authority for all classes of drugs (with the NP obtaining an independent Drug Enforcement Administration number) to a requirement for a physician countersignature.

In 1977, the Medicare statute was amended to allow NPs practicing primary care in underserved rural areas to receive payments. As part of the 1997 Balanced Budget Act, Medicare is obligated to reimburse nurse practitioners for all Part B services. Medicaid also reimburses NPs, usually at the physician rate, and in 1993, the Health Care Financing Administration ruled that all states had to pay pediatric and women's health NPs for services covered under each state's regulations pertaining to advanced nursing practice.

NEW EMPHASIS ON QUALITY AND SAFETY OF PATIENT CARE

The advent of a more market-driven health care system has directed new attention to both the risks and opportunities for ensuring patient care quality and safety. The growing presence of managed care has provoked concerns by both patients and physicians over quality of care and the restricted accessibility to certain forms of care more readily available under a fee-for-service system. At the same time, there are increased efforts by many health care organizations and government agencies to establish more effective criteria for measuring patient care outcomes.

A recent report by the Institute of Medicine has given new visibility to another issue largely ignored — the frequency and consequences of provider error in delivering health services *(IOM, 1999)*. The acknowledgement by this report that a significant number of patient deaths can be attributed to provider error is provoked considerable alarm. Many of the report's recommendations are controversial, such as the issue of how large a role should government play in new reporting and regulatory requirements.

Hospitals, managed care plans, and other institutions often cited as the settings where these patient care quality and safety concerns arise are the same settings frequently used for graduate medical education.

The regulation of physicians and other health professionals in the name of patient safety has been the traditional responsibility of state governments. Although these regulatory practices are largely viewed as effective, some experts believe that states should require more of their medical licensing boards. Increased reports by the media and others suggest that several cases of physician negligence and malpractice have been met with an inadequate response by state medical boards. This has prompted calls for more effective sanctions and new measures to assure continuing physician competence.

LABOR RELATIONS ISSUES

Participation by today's hospitals and health care institutions in more managed, market-driven systems of care are creating new pressures on health professionals working in these facilities. In teaching hospitals, shorter stays by sicker patients, increased paperwork, more clinics, and often fewer staff physicians typically mean increases in resident work hours and new concerns about excessive labor time and patient safety.

A few years ago, the state of New York — prompted by an incident in which resident fatigue may have attributed to a patient's death — invoked new regulations governing the work hours of interns and residents. In 2000, the National Labor Relations Board ruled that resident physicians are deemed employees, no longer students, and thus are eligible to engage in collective bargaining — including the protected right to strike. Several states also now are debating whether physicians and other health care professionals should have collective bargaining authority. To date, these actions have provoked few residents to engage in any form of effective unionization; although it is not clear what will occur in the future.

ACCOUNTABILITY OF GME PROGRAMS TO PUBLIC FUNDERS

Increased attention in the debate about the future size and shape of the physician workforce is centering on whether public subsidies for graduate medical education should be significantly redistributed to more effectively address the nation's persistent and changing physician workforce needs. Historically, most GME subsidies from federal and state governments to teaching programs have been distributed without restriction as to the number and specialty of physicians being trained.

There have been increased calls for Medicare, the largest explicit payer of GME, to alter its policies to distribute GME funds to teaching hospitals more in accordance with physician workforce needs. However, recent changes in Medicare GME policy have devoted little or no attention to this issue. A growing number of state Medicaid programs, seeking to be more prudent, farsighted purchasers of care, now recognize that their support for GME is a valuable tool for meeting the future health care provider needs of Medicaid beneficiaries as well as the public-at-large. A few of these states have developed model approaches to payment for GME under managed care that include incentives for and measures of greater accountability in distribution of payments to various training settings in ways that best address state health workforce needs; significant documentation of GME costs and benefits; and innovative means for pooling Medicaid GME funds with other payers.

THE IMPORTANCE OF PUBLIC FINANCING FOR GME

THE ROLE OF THE FEDERAL GOVERNMENT

TRADITIONAL FINANCING PROGRAMS

Beginning in the early 1960s, the federal government recognized that there was an ongoing public benefit and cost associated with a self-replenishing physician supply. Although Congress at the time expressed some reluctance about a federal role in underwriting the replenishment of physician supply, it chose to move forward because of the lack of an obvious alternative.

Today, the federal government is the largest explicit funder of graduate medical education, distributing over $7 billion annually to GME programs. Federal funding for GME is provided through Medicare, Medicaid[17], Department of Defense (DoD), Department of Veterans Affairs (VA), and the U.S. Public Health Service (PHS). The VA in federal fiscal year (FFY) 1997 provided training for more than 32,000 residents in about 130 VA facilities, at a cost of about $400 million, making it the largest single provider of GME training sites in the country.[18] In FFY 1998, DoD paid the salaries of some 3,000 residents who trained in the military, spending almost $170 million. Within PHS, the National Health Service Corps (NHSC) — created to improve the geographic distribution of physicians — offers scholarships and loan repayment arrangements with physicians and other health professions trainees totaling almost $80 million annually. Other PHS programs provide about $90 million annually in scholarships, grants, and loans to physicians in training.

Many of these federal programs have distinct objectives. The VA provides learning opportunities for residents to treat certain conditions peculiar to, or particularly concentrated in, VA facilities. In return, those facilities rely on residents, who cost less than fully trained physicians, for a large portion of their physician services. DoD offers a similar training experience, with the added benefit of helping to ensure a supply of physicians in time of war or other national emergency. The NHSC enhances access to basic medical care in underserved areas, as part of PHS's goal to encourage individuals to enter the health professions and provide opportunities for those who otherwise might not be able to afford the training. Common to all these programs is the attention to training the appropriate mix of trainees and specialties for the sponsoring organizations, and to some extent for all of society *(Guterman, 2000)*.

Health Care Financing Administration: Medicare Payments

Of these federal programs, Medicare is by far the largest contributor, providing about $6.7 billion for GME in 1998. *(Table 4)* Unlike the other federal initiatives, Medicare is not designed to subsidize the training of specific physicians. With the creation of Medicare in 1965,

[17] The federal government provides matching funds to state Medicaid programs. States have the option to support additional services such as GME and receive matching federal funds for them. The role of Medicaid in GME is not determined at the federal level, because there are no federal requirements relating to Medicaid payments for GME or to teaching hospitals. Such decisions are left to each state.

[18] In the late 1990s, VA begun realigning its GME programs to place greater emphasis on primary care rather than specialty training.

TABLE 4

Medicare Payments to Hospitals for Graduate Medical Education (In Billions of $)

	IME Payments	Direct GME Payments	Managed Care Carve Out Payment
1990	2.81	1.70	
1991	3.09	1.82	
1992	3.51	2.26	
1993	3.87	2.41	
1994	4.20	2.44	
1995	4.65	2.50	
1996	4.94	2.55	
1997	4.44	2.09	
1998	4.19	1.76	0.73

Source: Council on Graduate Medical Education, *15th Report: Financing Graduate Medical Education in a Changing Health Care Environment*, 2000. Data from U.S. Congress.

Congress simply included a provision to subsidize GME in teaching hospitals in order to meet a growing national need for high quality physicians.[19]

Payments for GME, made primarily through Part A of the Medicare program which covers inpatient hospital care and some post-hospital services, are distributed in two components — a direct medical education subsidy and an indirect medical education adjustment. The DGME subsidy covers the Medicare portion of residents' and teaching physicians' salaries and benefits, classroom and teaching facilities, and overhead costs. Teaching hospitals receive reimbursement for DGME costs based on the annual number of inpatient days of Medicare beneficiaries, the total number of residents at the hospital (and ambulatory settings if the hospital assumes substantially all of the training costs), and the salary and benefits of residents and instructors. DGME is paid on per-resident basis to the teaching hospital. The rate paid per resident is specific to each hospital. The IME adjustment covers the Medicare portion of the higher costs associated with teaching hospitals. Teaching hospitals receive reimbursement for IME costs based on the amount of inpatient services for Medicare beneficiaries. Nationally, direct costs constitute roughly one-third of Medicare GME payments, whereas indirect costs account for two-thirds.

Prior to the early 1980s, Medicare funded inpatient hospital services, as well as GME, on an open-ended, reasonable cost basis. DGME costs were based on each hospital's historical, "Medicare-allowable" costs. In 1983, Medicare inpatient hospital payment policy was overhauled with the establishment of a prospective payment system, and following passage by Congress of the Consolidated Omnibus Budget Reconciliation Act (COBRA) in 1985, Medicare GME payment methodology was dramatically changed. Beginning in FFY 1985, Medicare made separate payments for direct and indirect medical education costs. For direct medical education costs, Medicare began paying teaching hospitals a specific per resident amount, and limited the number of years for which it fully supports its share of a resident's training. The formula to determine GME rates was based on the hospital's calculated GME expenses in 1984 and 1985, annually updated by an inflation factor set by Medicare. For the first time, COBRA allowed Medicare to begin paying teaching hospitals an adjustment or percentage add-on payment for IME costs as part of the new prospective payment rate.

Because of large variations in historical per resident cost amounts across training institu-

[19] Medicare GME payments also are viewed as needed to protect beneficiary access to services to teaching hospitals and ensure the viability of these hospitals' which are increasingly dependent on Medicare revenues.

tions (based on inconsistencies in identifying and allocating such costs), total GME subsidies to teaching hospitals by Medicare range widely — from about $60,000 to $120,000 per resident per year. In FFY 2000, the average Medicare payment totaled more than $73,000 per resident. In addition to receiving these payments, hospitals get an additional benefit of three to eight years of low-cost labor.[20]

Until passage of the 1997 Balanced Budget Act, Medicare imposed no limits on the number of residents it supported — either at an individual hospital or in the national aggregate — as long as the residents are enrolled in a training program approved by the Accreditation Council for Graduate Medical Education or leading to a certificate by the American Board of Medical Specialties.[21] The teaching hospitals received from Medicare more money and more subsidized labor per each additional resident, particularly students with lengthy and expensive specialized training programs. These circumstances provided hospitals with incentives to expand the size and duration of residency programs. In particular, these incentives inadvertently encouraged these residencies to train more specialists. The few residents training in primary care specialties in hospital settings are more likely to branch into subspecialties because of the non-primary care focus of their work environment *(Guterman, 2000)*.

Typically, government GME payments flow to individuals responsible for managing hospital general operating funds, not to persons responsible for directing residency training programs. This practice makes it difficult on a cost accounting basis to separate service from education revenues, and may impede the development and financing of any residency programs in non-hospital settings or achieve other goals to improve the size, mix and location of the physician workforce.

Also, until recently, the linkage of GME payments to Medicare for many teaching hospitals with low Medicare utilization (i.e., children's hospitals) meant that these institutions received little or no federal support for educational activities. Furthermore, until passage of the BBA, hospitals with GME costs attributable to Medicare managed care enrollees were not compensated. Beginning in 1998, the BBA began phasing-in direct GME payments to teaching hospitals under Medicare managed care.[22] *(Table 4)*

Health Resources and Services Administration: Public Health Service Payments

Historically, the Health Resources and Services Administration (HRSA), location of the U.S. Public Health Service (PHS), has provided a variety of mechanisms for supporting graduate medical education. The following are GME initiatives traditionally supported by HRSA:

- **Various programs under Title VII of the PHS Act** — reauthorized by Congress in 1998 — provide partial federal support for primary care and geriatric graduate medical education, encourage physicians to practice in rural areas, and

[20] The annual salary of residents ranges from $30,000 to $50,000 according to their year in training. The nationwide mean, gross annual salary for all physicians is nearing $200,000.

[21] Medicare also supports residents in approved training programs in osteopathy, dentistry and podiatry.

[22] The Health Care Financing Administration has estimated that the dollar value of this Medicare managed care "carve out" could reach $2.6 billion for FFY 2002. This could become a major source of federal funding for GME.

attract more minority and disadvantaged students into the health professions. In addition, to discipline-specific grant programs, several interdisciplinary programs are funded under Title VII. The oldest and largest of these programs is the Area Health Education Centers (AHEC), which received an appropriation of $26 million in FFY 1997. AHEC grants support educational programs in medically underserved communities for students in medicine, nursing, and other health professions.

- **National Health Service Corps** does not fund residency training, but provides scholarship and loan repayment programs to encourage physicians and other health professionals to practice in health professional shortage areas. NHSC was due for congressional reauthorization in FFY 2000.

RECENT OR NEWLY PROPOSED PROGRAMS

1997 Balanced Budget Act and Consequent Refinements/Restorations

Passage of the Balanced Budget Act represents a significant change in Medicare support for graduate medical education. After 30 years of supporting GME through open-ended payments that rewarded teaching hospitals for training more physicians, the federal government with this legislation enacted several provisions that curtail Medicare's significant GME commitment. *(Table 5)*

In creating a greater awareness among lawmakers of Medicare's role in GME, the BBA also established two commissions to address GME financing and other Medicare policies. A new federal advisory panel charged with

TABLE 5

Major GME Provisions: Balanced Budget Act of 1997 (Public Law 105-83)

• Capped number of residents qualifying for Medicare Direct Medical Education (DGME) reimbursement to number reported on or before 12/31/1996. (This does not apply to new programs in rural underserved areas until they have had three years to fill their resident cohorts, and to hospitals that have not had residency programs prior to 1/1/1995.)
• Initiated phased in reduction of the Medicare Indirect Medical Education (IME) adjustment factor from 7.7% per 0.1 intern/resident-to-bed ratio to 5.5% over a four-year period.
• Uses a three year rolling average for calculating number of residents for DGME and IME payments to hospitals to soften the impact of reductions in the number of residents.
• Provides transitional financial assistance to teaching hospitals that voluntarily downsize residency programs. Hospital receives a declining proportion of GME funds in transition if they reduce residents by at least 20% over 5 year period. Stiff penalties are imposed if hospitals fail to meet 20% reduction.
• Non-hospital providers (i.e., federally qualified health centers, rural health clinics, managed care plans that contract with Medicare) can receive DGME payments for residents if non-hospital provider bears all or substantially all the costs of training in the non-hospital setting.
• Medicare IME payments (and DGME payments previously received) to the hospital for the time residents train at non hospital ambulatory care sites (e.g., physician offices) if the hospital incurs all or substantially all the training costs at that site.
• Hospitals may affiliate for purpose of meeting the aggregate cap on full-time equivalent (FTE) residency slots. Authorizes a GME demonstration project to evaluate the effectiveness of financing GME through consortia.
• Decouples GME payments from payments to Medicare+Choice healthplans for patient care. GME payments are carved out – GME funds that Medicare would have included in its payment to managed care organizations will gradually be excluded from those payments to the health plans and will be distributed directly to the hospitals.

recommending ways to preserve Medicare — the National Bipartisan Commission on the Future of Medicare — established a task force to address federal support for GME. The so-called Medicare Commission never issued any formal recommendations on GME. Certain members of the GME task force called for GME payments to be financed independent of Medicare through either a mandatory or discretionary federal appropriation program.

Another panel established by the BBA was the Medicare Payment Advisory Commission (MedPAC) — a new body formed by consolidating two groups to advise Congress on Medicare — the Physician Payment Review Commission and the Prospective Payment Assessment Commission. MedPAC was also directed to examine federal GME policies. A controversial 1999 MedPAC report on Medicare's financing role for GME recommended that Medicare DGME and IME payments be combined into a single payment that explicitly reimburses teaching hospitals for the higher value of patient care they provide rather than explicitly providing a subsidy for GME itself. The recommendation would redistribute Medicare funds among teaching hospitals, but does not call for any overall decrease in funds because of recently reported financial problems facing these hospitals. MedPAC concludes that Medicare's primary mission is to provide beneficiaries access to services and that other specific targeted programs may be more appropriate for achieving physician workforce goals.

The BBA changes affecting Medicare support for GME are a realization by federal officials of two major fiscal factors. One, the number of physicians is growing faster than the population growth and that a surplus of physicians may contribute to waste of resources and increasing health care costs. The other issue is the overall financial trouble of the Medicare program. The trust fund that finances the Medicare program is in danger of bankruptcy. The Medicare program is comprised of two trust funds: Hospital Insurance (HI) and Supplementary Medical Insurance (SMI). The HI trust fund, also referred to as Medicare Part A, covers inpatient and hospital services including support for GME.

Reductions in DGME payments following the BBA were estimated to be close to $900 million over the first five years. IME payments were reduced in the Act's language by $5.1 billion over the same four years. The IME adjustment was gradually reduced so that by FFY 2001 it would be 29 percent lower than it was in 1997. The GME provisions were part of the BBA's overall budgetary mandates to reduce Medicare spending $112 billion over five years.

In fact, since 1997, Medicare spending has grown much more slowly than anticipated by the BBA, and the Act's Medicare cuts are now expected to total $200 billion. In response to growing concerns from providers about payment cutbacks, Congress passed the Balanced Budget Refinement Act of 1999 (BBRA), which included provisions that decreased the detrimental effects of BBA on graduate medical education. In particular, BBRA revised the anticipated reduction in IME payments by decreasing the annual reductions specified in BBA and freezing the reduction after 2002. In addition, BBRA softens the impact of the per resident cap by allowing hospitals to count up to three full-time equivalents (FTE's) on maternity, disability, or other approved absence, allowing rural hospitals to increase their resident cap by 30 percent for IME and DGME payments, and allowing non-rural hospitals to receive IME and DGME payments for separately accredited training tracks in rural areas. Since pas-

sage of BBRA, there have been additional calls for Congress to authorize further restorations of Medicare payments.

Children's Hospitals GME Payment Program

Acknowledging the importance of Medicare support for GME, Congress amended the Public Health Service Act (Public Law 106-129) in 1999 to establish a new program to support training of pediatric and other residents. The Children's Hospitals GME Payment Program authorized up to $285 million annually in funding for two years to children's hospitals to compensate them for the lack of Medicare GME funds they receive. Under the current Medicare GME system, children's hospitals — which treat far fewer Medicare patients than other teaching hospitals — receive less than $2 million annually in GME payments. The program is viewed as an interim measure to assist children's hospitals to supporting GME while Congress examines ways to reform federal GME financing.

In FFY 2000, $40 million was appropriated for this program to pay for both direct and indirect GME costs.[23] The program is administered by the Bureau of Health Professions (BHPr) in the Health Resources and Services Administration. In October 2000, HRSA awarded about $38 million in GME funds to 56 children's hospitals nationwide. The Children's Health Act of 2000 (Public Law 106-310) extended the program through FFY 2005.

New Attention to Interdisciplinary and Community-Based Education

Within HRSA, the BHPr was recently reorganized to create a new Division of Interdisciplinary and Community-Based Programs. This division will administer professions grant programs for interdisciplinary and community-based education authorized by Title VII of the PHS Act, such as the AHEC Program and the Burdick Rural Interdisciplinary Program. These programs were previously administered by discipline-specific divisions. In addition, the Health Professions Education Partnerships Act of 1998 (Public Law 105-392) required BHPr to establish a new advisory committee on community-based and interdisciplinary health professions education.

The Health Professions Education Partnerships Act also modified BHPr's faculty loan repayment program for faculty from disadvantaged backgrounds in a manner that may make it a useful tool for recruiting community-based faculty. This program repays up to $20,000 per year in loans for educational expenses for health professions faculty from families with low incomes and/or other socioeconomic disadvantages. Prior to the enactment of this legislation, only full-time faculty was eligible to participate. By extending eligibility to part-time faculty, the program can now be utilized by faculty who split their time between teaching and clinical care. Given that many community-based health professions education sites serve disadvantaged populations, this program may be well suited for recruiting faculty from backgrounds similar to their clients.

All-Payer GME Fund Proposals

Despite initiatives to restore Medicare GME payments reduced by BBA and to make other federal improvements in GME financing, the future level and form of federal GME reimbursement remains uncertain. In particular, Medicare GME payments are at risk as the federal government contemplates

[23] This translates to just under $12,000 per resident.

offering coverage for prescription drugs, and Congress remains pressured to reduce Medicare expenses to address concerns over depleted revenues in the HI Trust fund.

Consequently, federal lawmakers have examined other avenues for payment. In 1999, two bills were introduced in Congress to create an all-payer trust fund for graduate medical education. Representative Benjamin Cardin (D-MD) introduced the All-Payer Graduate Medical Education Act (HR 2224), which would create a trust fund that would be financed by fees imposed on health insurance and distributed to GME programs. A bill (S 210) by Senator Patrick Moynihan (D-NY) would create a 1.5 percent tax on all health insurance premiums of approximately $5 billion annually to fund GME attributable to non-Medicare patients. In addition, Medicaid would contribute to the fund. Several organizations in recent years have called for the creation of an all-payer GME fund. Proposals have been put forward by the Pew Health Professions Commission, Commonwealth Fund, Council on Graduate Medical Education, and various medical specialty associations.

ROLE OF THE STATES

TRADITIONAL FINANCING PROGRAMS

The role of state government in supporting medical education is well established. Since the 1940s, states have subsidized loan and scholarship programs as financial incentives for medical students and physicians in training, and most states have provided some level of institutional support for medical education.

Historically, the individual states have funded undergraduate medical education through general budget appropriations. According to the Association of American Medical Colleges (AAMC), state and local appropriations to medical schools in academic year 1998–1999 totaled $3.25 billion — about double the level of support provided in the early 1980s. These general revenue funds go largely to supporting undergraduate training, but include some funding for graduate programs in primary care. About 95 percent of this funding goes to public medical schools — which themselves represent 60 percent of the nation's allopathic medical education institutions and 30 percent of all osteopathic schools.

While state appropriations have risen steadily, the proportion they represent of medical school revenues has declined by nearly two-thirds — from nearly 23 percent in 1981 to just over 8 percent today. The average percentage, however, masks significant differences between public and private institutions. In public medical schools, state funding represents 16 percent of revenues, while the comparable figure for private schools is only about one percent. The declines in state funding proportions have resulted from growth in alternative sources of revenue in medical schools — mainly from faculty practice plans.

Increasingly important among state lawmakers is the issue of what is being gained for the $3.25 billion expenditure. A particular concern is whether the medical students being trained plan to practice upon completion of residency training in the state that is paying the bill. According to AAMC, just nine states[34] and Puerto Rico see 75 percent or more of their 1997 medical school graduates planning to practice in-state. On the other hand, in 11 states and the District of Columbia, less than half of the medical school graduates plan to remain in-state.

In addition, most states elect to provide some level of support for graduate medical education. The major means for doing so are described below.

MEDICAID PAYMENTS TO TEACHING HOSPITALS

Since the 1960s and the initiation of the Medicaid program, teaching hospitals have benefited from state funding for the clinical training of physicians. Unlike Medicare, which includes a statutory requirement to pay for graduate medical education, Medicaid's link to GME funding is purely voluntary. Still, nearly all states fund some level of GME costs under their fee-for-service Medicaid programs. These payments totaled over $2.3

[34] Washington, Arkansas, Mississippi, California, Minnesota, South Dakota, Georgia, Texas and Hawaii.

TABLE 6
Medicaid Payment for Graduate Medical Education, March 1999

State	Under Fee-for-Service		Under Capitated Managed Care	
	DGME	IME	DGME	IME
Alabama	NO	NO	GME Payments in MCO rates	
Alaska	NO	NO	Capitated Managed Care Not Implemented	
Arizona	YES	NO	YES	NO
Arkansas	YES	NO	Capitated Managed Care Not Implemented	
California	Payments Do Not Distinguish Between DGME/IME		Capitated Managed Care Not Implemented	
Colorado	YES	NO	YES	NO
Connecticut	YES	NO	GME Payments in MCO rates	
Delaware	Payments Do Not Distinguish Between DGME/IME		GME Payments in MCO rates	
District of Columbia	YES	YES	Payments Do Not Distinguish Between DGME/IME	
Florida	Payments Do Not Distinguish Between DGME/IME		GME Payments in MCO rates	
Georgia	Payments Do Not Distinguish Between DGME/IME		NO	NO
Hawaii	Payments Do Not Distinguish Between DGME/IME		GME Payments in MCO rates	
Idaho	NO	NO	Capitated Managed Care Not Implemented	
Illinois	NO	NO	NO	NO
Indiana	YES	NO	GME Payments in MCO rates	
Iowa	YES	YES	YES	YES
Kansas	YES	YES	GME Payments in MCO rates	
Kentucky	Payments Do Not Distinguish Between DGME/IME		IME Payments in MCO rates	
Louisiana	YES	NO	Capitated Managed Care Not Implemented	
Maine	YES	YES	NO	NO
Maryland	Payments Do Not Distinguish Between DGME/IME		Payments Do Not Distinguish Between DGME/IME	
Massachusetts	YES	NO	NO	NO
Michigan	Payments Do Not Distinguish Between DGME/IME		Payments Do Not Distinguish Between DGME/IME	
Minnesota	YES	YES	GME Payments in MCO rates **	
Mississippi	YES	YES	GME Payments in MCO rates	
Missouri	YES	NO	YES	NO
Montana	NO	NO	Capitated Managed Care Not Implemented	
Nebraska	YES	YES	YES	YES
Nevada	Payments Do Not Distinguish Between DGME/IME		NO	NO
New Hampshire	YES	YES	NO	NO
New Jersey	Payments Do Not Distinguish Between DGME/IME		GME Payments in MCO rates	
New Mexico	YES	YES	YES	YES
New York	YES	YES	YES	YES
North Carolina	YES	YES	NO	NO
North Dakota	YES	YES	NO	NO
Ohio	YES	YES	GME Payments in MCO rates	
Oklahoma	YES	YES	YES	NO
Oregon	YES	YES	GME Payments in MCO rates	
Pennsylvania	YES	YES	YES	NO
Puerto Rico	NO	NO	Capitated Managed Care Not Implemented	
Rhode Island	YES	YES	GME Payments in MCO rates	
South Carolina	YES	YES	YES	YES
South Dakota	NO	NO	Capitated Managed Care Not Implemented	
Tennessee	No Fee-for-Service System		Payments Do Not Distinguish Between DGME/IME	
Texas	YES	NO	YES	NO
Utah	Payments Do Not Distinguish Between DGME/IME		GME Payments in MCO rates	
Vermont	YES	YES	NO	NO
Virginia	YES	YES	YES	NO
Washington	YES	YES	***	
West Virginia	YES	YES	YES	Payments in MCO rates
Wisconsin	YES	YES	GME Payments in MCO rates	
Wyoming	YES	NO	Capitated Managed Care Not Implemented	

* Capitated managed care is defined as Medicaid's use of risk-based capitation payments, and does not include any payments made under a primary care case management program.

** GME carve-out to be implemented in October 2000 consequent to federal approval of waiver request.

*** 2 hospitals get DME/IME payments; for other hospitals, payments are in MCO rates.

Legend: DGME = Direct Medical Education Costs, IME = Indirect Medical Education Costs, MCO = Managed Care Organization

Source: Update to: Tim M. Henderson, MSPH, National Conference of State Legislatures, Funding of Graduate Medical Education by State Medicaid Programs, for the Association of American Medical Colleges, 1999.

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billion in 1998, making Medicaid the second largest payer of GME in the United States *(Henderson, 1999)*. There is tremendous variation, however, in the financial significance of that funding. State Medicaid GME funding ranges between one percent and nearly 20 percent of total Medicaid inpatient hospital payments across states. The state average is about seven percent.

A 1999 survey conducted by the National Conference of State Legislatures (NCSL) elucidated the approaches of states to Medicaid funding of graduate medical education. Five states[35] and Puerto Rico do not use Medicaid funding explicitly for GME. The majority of states (24 of 43) using Medicaid to fund graduate medical education under their fee-for-service programs pay for both direct and indirect GME costs. *(Table 6)* The majority of states (22 of 43) also distribute GME payments as part of a hospital's per-case or per-diem rate. However, a large number of states distribute GME funds as a separate direct payment for education. Like other payers, Medicaid traditionally has paid teaching hospitals for GME costs in recognition that the institutions have higher costs.

Because most states, in paying for GME, follow the Medicare methodology that reimburses for education and service provided in hospital-based settings only, Medicaid programs have done little to accept payment for the additional costs of teaching in ambulatory sites. However, two states — Tennessee and Oklahoma — are now bypassing the hospitals and making payments directly to medical schools. In a handful of states, GME payments are now allocated not only to medical residency programs, but also to nursing and other professions attached to teaching hospitals *(Henderson, 1999)*.

General and Line-Item Appropriations

Most states provide general or line-item appropriations for graduate as well as undergraduate medical education. These figures are difficult to track because they change annually and are often directed to a specific teaching institution. Appropriated funds typically are granted to training institutions in a lump sum or as a specific amount of money per year for each resident in training.

General appropriations for GME largely have been targeted at family medicine and other primary care specialties. Since the 1970s, most states, focusing on the need for additional primary care physicians, have introduced a direct line item or funded a state agency to support residency programs in family medicine. Many of these states also link institutional appropriations to state physician loan forgiveness programs that require the physician to continue practicing in the state for a specific number of years after residency. Such linkages help to assure that the taxpayer benefits from their investment in the physicians' education.

According to the American Academy of Family Physicians, in the mid-1990s a state on average provided about $3.6 million a year (or about $21,000 per state-funded residency position) to support family practice residencies. In recent years, at least eight states each have appropriated more than $7 million annually for such programs. Although family practice residencies have grown significantly in number and size in many states, state support in general has remained stagnant or declined. Depending on the size of the programs, there is tremendous variance among states as to the amount of a resident's salary or total costs covered by the funds. In general, residency training is financed

[35] Alaska, Idaho, Illinois, Montana and South Dakota.

TEXAS: STATE APPROPRIATIONS FOR GME

An extensive 1989 law required the Texas Higher Education Coordinating Board, the newly established Center for Rural Health Initiatives, medical and other health care education schools to cooperate to improve and expand programs for rural areas, including the following: 1) encourage and coordinate the creation or expansion of a rural preceptor program among medical schools and teaching hospitals; 2) require family practice residency programs to provide an opportunity for residents to have a one-month rotation through a rural setting; 3) develop relief service programs for rural physicians to facilitate access to continuing medical education; and 4) require medical schools to incorporate a third-year clerkship in family practice for all medical students and report on its efforts to fulfill the intent of having at least 25 percent of first year primary care residents in family practice.

A follow-up 1995 law included several new provisions to improve the supply of family practice physicians. Among those pertaining to medical education are: 1) new statewide preceptorship programs in general internal medicine and general pediatrics modeled after the existing family practice preceptorship program; 2) an additional $1 million for a family practice residency training program (the first increase in state funds for the program since 1988); 3) three family practice residencies to provide services in economically depressed or rural areas of the state; and 4) support for an additional 150 community-based primary care residency positions phased in over five years, although per-resident allotments will not increase.

Primary Care and Undergraduate Medical Education. About 1,100 Texas students spend one month per year in a rural clerkship. Each school is directed to expend specific amounts from its state appropriations or institutional funds for the clerkships. For 1996–97, the Legislature mandated that a total of $7.3 million be spent on the clerkships across eight medical schools. It is not clear, however, whether the clerkship requirement is a significant influence on a student's decision to practice family medicine.

Created by the Legislature in 1983, the Family Practice Preceptorship Program provides state funds to medical students at each of the eight state schools for an elective four-week opportunity to work at a primary care physician practice site. (Family practice preceptorships occurred before 1984 without state support.) The program is administered by the Higher Education Coordinating Board in conjunction with the Texas Academy of Family Physicians, which assists in the recruitment of preceptors. Preclinical students receive a $500 stipend; clinical students receive $600.

Primary Care and Graduate Medical Education. In 1977, the Legislature first made state financial support available for postgraduate training in family medicine. The law gives the Texas Family Practice Residency Program, administered by the board, authority to allocate state funds to family practice residencies on a contract basis. The program initially in 1977–78 appropriated about $852,000 to 12 operating residencies to support 267 positions and to nine new programs for planning activity. Today, at least 25 state-funded programs support over 700 positions. (Another six family practice residency programs and 100 positions do not receive state support.)

The board requires all programs to have substantial sources of support from other entities, such as patient revenue, hospital and local funds or medical schools; funds are limited to no more than 35 percent of a program's total budget. The board also is required by the 1977 law to provide for prior budget review and audits of all funded programs and to collect information from programs about the area distribution of family physicians and the improvement of medical care in underserved communities.

The effect of the rural rotation requirements appears to have been beneficial — both because rural practice was incorporated into the core curricula for medical students and because it was elevated to the level of an optional rotation in residency programs. As a result, there are increased opportunities to expose more physicians in training to rural practice.

Data collected over the past 20 years shows that the state retains about 87 percent of its family practice residents and that approximately seven percent locate in rural or underserved areas of Texas.

Current Funding Issues. Although the number and size of Texas' family practice residencies have grown, per-resident spending (adjusted to 1996 dollars) has declined since the early 1980s. The aforementioned 1995 law provided an enhanced level of funds for family practice training and expanded the number of state-supported primary care residency positions but did not increase the per-resident allotment. Many workforce experts believe that an increasing number of residency programs will operate from a service vantage rather than from an educational perspective. In part, the rationale behind seeking further state support for graduate training is that funds for community-based faculty to supervise residents is inadequate and, further, that revenue to support academic missions is threatened by the reduction of Medicare GME support and the explosive growth of commercial and Medicaid managed care plans, which may exclude these teaching programs from participation.

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through a mixture of patient fees, grants and medical education reimbursements.

One state — Texas — has in place a variety of innovative financing strategies and programs to support GME. *(See "Texas: State Appropriations for GME.")*

Often tied to the need for more family practice physicians is the need for physicians in rural areas. Several states provide additional GME funding to institutions that train physicians specifically for practice in rural communities. For example, Oregon in 1997 created a State Scholarship Commission which will pay an institution up to $18,000 for each family practice intern or resident position reserved for training students entering medical practice in rural areas *(AOA, 2000)*. While the payment is sent to the hospital, the funding is viewed as a loan to the student.

States with area health education centers (AHECs) typically receive federal grants matched with state funds to support operations in their early development. Over time, AHECs in most states depend increasingly on state appropriations for operational support as federal funding is phased out.

Scholarships and Loans with Service Obligations

Most states have a range of scholarship and loan repayment programs intended to encourage small numbers of physician graduates to practice in areas of greatest need. Many states with few primary care residencies, or with such residencies that have fewer filled positions, are offering loan repayment incentives to medical students who select in-state primary care residencies. Such initiatives are viewed as effective because the site of residency training is thought to be a strong predictor of future practice location. To discourage default, most states levy penalties on students who do not meet their obligations. Financial incentives to medical students and residents are increasingly targeted to those who wish to practice primary care in medically underserved areas.

Regulation and Oversight Linked to Appropriations

Legislative Mandates Linked to Outcome-Based Measures. In hope of shifting the balance in physicians trained in generalist versus specialty practice, seven states (Arizona, Minnesota, North Carolina, Tennessee, Texas, Washington and Wisconsin) between 1992 and 1996 passed laws setting specific goals for its state-supported medical schools to increase the proportion of its graduates who plan to practice primary care. (In North Carolina, private schools also are obligated.) Typically, schools are required to prepare a plan with the goal of training 50 percent of their graduates who plan to practice primary care by a certain date. Whether such measures have been effective in shifting the balance is subject to debate *(Weissert, 1998)*.

Requirement for Public Medical Schools and Residencies to Establish Family Practice Clerkships and Rural Rotations in Community Settings. A 1989 law gave Texas the distinction of becoming the first state to require its public medical schools to incorporate into their curricula a third-year community clerkship in family practice for all medical students. The law also requires schools to report on their efforts to interest at least one-fourth of their students to enter a family practice residency. All medical students must complete a family practice clerkship during their third year of school. The same law requires all publicly funded residency programs to provide an opportunity for residents to have a one-month rotation in a rural community setting. The rural rotation is

required to be offered as an optional site for all family practice residents.

A growing number of residency programs now require medical students to do primary care clerkships. Just a handful of residencies have examined the need to offer rural rotations for primary care residents.

Greater Operational Flexibility for Statutory Public (Teaching) Hospitals

Most public academic health centers (PAHCs) have long depended on their state governments for financial support in the form of general fund appropriations and Medicaid payments for health services and graduate medical education. About 45 percent of all academic health centers are state-owned. Furthermore, public teaching hospitals' existence and the nature of their governing structure often originates from state statute or regulation.

Several PAHCs, threatened with major losses in market share and financial instability, may have pressed or exceeded their state statutory authority by aggressively seeking to expand their referral base by building primary care networks, reduce their role in GME, or merge (or be acquired by) for-profit hospital systems.

Some states that continue to view some or all of these centers as significant political and economic institutions have been compelled to provide further protections or opportunities for PAHCs compromised by these circumstances. Legislatures in at least eight states (Arizona, Colorado, Florida, Idaho, Maryland, Oklahoma, Oregon and West Virginia) have been persuaded to allow some or all of their statutory public hospitals to create new public or nonprofit authorities to operate under fewer restrictions on procuring capital, creating new physician-hospital organizations, pursuing joint operational arrangements, and other initiatives.

Small Grants/Appropriations to Support Nurse Practitioner and Physician Assistant Training

In 1997, 66 nurse practitioner (NP) training programs and 19 physician assistant (PA) training programs received some form of state financial support. On average, state funds represent anywhere from 5 percent to 100 percent of the annual budget of a NP or PA training program, but the percentage is higher for NP budgets (67 percent) than for PA budgets (36 percent). State support is defined as 1) general fund (public) appropriations awarded to the program's sponsoring institution, which in turn uses the state money to support the training program, or 2) a training program's receipt of grant funds earmarked by the state for the program *(Henderson, 1997)*.

Although nurse practitioner and physician assistant training programs now exist in almost all states, major state support is non-existent. The amount varies greatly among the training programs, from $30,000 to $2.4 million for NP programs and $46,600 to $978,000 for PA programs. State support for NP training may be limited in part because most programs are not affiliated with a larger academic health center.

RECENT OR NEWLY PROPOSED PROGRAMS

Explicit Medicaid GME Payments under Capitated Managed Care

Fee-for-service remains the predominant vehicle for distributing Medicaid GME payments. Only about 20 percent of such payments are accounted for by managed care arrangements *(Henderson, 1999)*. Nevertheless, with the continued rise of managed care, states have begun a vigorous dialogue about the future role of Medicaid support for GME. Several states now recognize that their support for GME will be a crit-

ical element in meeting the future needs of medical education, and especially the future needs of Medicaid beneficiaries for whom teaching hospitals are the predominant health care providers.

The 1999 NCSL survey of state Medicaid programs found that of the 42 states and the District of Columbia (DC) that had implemented some type of capitated managed care system, 16 states and DC "carve out" GME payments from managed care rates and channel these payments directly to teaching hospitals or other medical education entities. Of these 16, about one-third pay for only DGME costs, a third pay for both direct and indirect GME costs, and a third make no direct/indirect cost distinction. Another 17 states have structured added GME payments into the capitation rates for managed care, with the added funding flowing directly to the managed care organization. *(Table 6)* Most of these states assume that the managed care organizations reflect the added GME costs in their negotiated reimbursement rates with teaching hospitals, but *do not require* that they do so. The remaining states appear not to pay for GME in any fashion under capitated managed care.

The Link between Medicaid GME Funding and State Policy Goals

With Medicaid funds becoming more important to reimbursement patterns of many teaching hospitals, a small but growing number of Medicaid programs are making

TABLE 7

States Linking Medicaid GME Payments to State Policy Goals, March 1999

State	State Policy Goal(s) That Apply to Medicaid GME Payments	Applicable to Fee-for-Service or Managed Care?
Georgia	• Encourage training in certain specialties (e.g., primary care).	Fee-for-Service
Maryland	• Encourage training in certain specialties (e.g., primary care); • Encourage training in certain settings (e.g., ambulatory sites, rural locations, medically underserved communities); • Improve the geographic distribution of the health workforce; • Create incentives for reductions in the size of residency training programs.	Managed Care
Michigan	• Encourage training in certain specialties (e.g., primary care); • Encourage training in certain settings (e.g., ambulatory sites, rural locations, medically underserved communities); • Improve the geographic distribution of the health workforce.	Both
New Jersey	• Improve the geographic distribution of the health workforce; • Create incentives for reductions in the size of residency training programs.	Fee-for-Service
New Mexico	• Encourage training in certain specialties (e.g., primary care); • Encourage training in certain settings (e.g., ambulatory sites, rural locations, medically underserved communities); • Create incentives for reductions in the size of residency training programs.	Both
Oklahoma	• Encourage training in certain specialties (e.g., primary care).	Managed Care
Tennessee	• Encourage training in certain specialties (e.g., primary care).	Managed Care
Texas	• Encourage training in certain specialties (e.g., primary care).	Both
Washington	• Only state-operated teaching hospitals are eligible for receive GME payments directly.	Both
West Virginia	• Encourage training in certain specialties (e.g., primary care).	Both

Source: Tim M. Henderson, MSPH, National Conference of State Legislatures, Funding of Graduate Medical Education by State Medicaid Programs, for the Association of American Medical Colleges, 1999.

MINNESOTA: GME ALL-PAYER FUND

Finding that medical education is important to the state's economy and that a more competitive health care market threatens many state teaching hospitals, the Minnesota Legislature in 1993 charged the commissioner of health with estimating the total costs of medical education and research in the state. A subsequent series of advisory committee reports identifying the need and support for explicit funding of medical education and research culminated in a 1996 estimate that $37 million (the deficit between teaching program costs and revenues) was at risk of being lost to competition in the state's managed care market (excluding any reductions in Medicare GME payments).

To address part of the deficit, the Legislature that same year authorized creation of a medical education and research trust fund (MERC) to capture new and existing sources of state medical education funds. The MERC Trust Fund consists of two pools: the general MERC Fund and the Medicaid or Prepaid Medical Assistance Program (PMAP).

For the general MERC Fund, lawmakers in 1997 appropriated $5 million in new funding from the state's general fund and $3.5 million from an existing state health care provider tax pool. Sponsoring institutions are eligible to apply on behalf of their accredited programs and are responsible for distributing the funds to the more than 300 training sites that actually incur the cost of medical education (including non-hospital settings). Eligible applicants are accredited programs that train physicians, advanced practice nurses, physician assistants, doctor of pharmacy practitioners and dentists. Reports from the training institutions are required to document that the distribution was made appropriately. Since 1998, the general MERC Fund has distributed over $50 million to clinical training sites around the state. In 1999, the state replaced revenues for the Fund from the health provider tax pool with revenues from the state's new tobacco settlement fund.

Lawmakers also agreed in 1997 to carve out GME funds from PMAP managed care rates beginning in 1999. (The carve-out was actually due to begin October 2000 consequent to receiving federal approval.) In 2001, approximately $18 million will be available for distribution. The funds will be directed to the new trust fund for distribution. Plans for how to distribute such funds currently are being debated, including whether distribution will be linked to certain performance measures. The Department of Health originally recommended that distribution be based equally on the amount of medical education and Medicaid revenue volume at a given teaching site.

an explicit connection between distributed GME funds and training program accountability. The NCSL survey found that 10 states require that some or all Medicaid GME payments be directly linked to state policy goals intended to vary the distribution of or limit the health care workforce. The goal of encouraging the training of physicians in certain specialties (e.g., primary care) is applied to GME payments by eight of the 10 states. Three of the states use GME payments to encourage training of physicians in certain settings (e.g., ambulatory sites and rural locations). *(Table 7)* Persistent concerns with overall high levels of Medicaid spending have fueled nine states to place explicit limits on Medicaid GME support. Four of the nine states limit only total GME spending; four other states limit just the number of residency positions eligible for GME payments.

Establishment of a Medical Education Trust Fund Financed by Multiple Payers

A state's ability to justify establishing a GME fund that pools Medicaid dollars with new and existing state GME appropriations, and perhaps Medicare dollars, makes state (and federal) support more open to public scrutiny, focuses attention on how the funds are used, and facilitates a link with state workforce needs. Having a dedicated pool also makes it easier for states to identify spending levels and rationalize distribution of funds in accordance with workforce needs.

In addition to New York, which for many years has supported GME through an

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all-payer fund[25], Minnesota's Legislature in 1997 approved and funded the creation of a similar fund. At least one other state (Utah) is discussing various means of pooling Medicare and Medicaid GME funds.

MONITORING USE OF FACULTY CLINICAL REVENUES IN PUBLIC MEDICAL SCHOOLS

Although the vast majority of state support for undergraduate medical education is unrestricted, some state lawmakers have questioned whether revenues generated by public medical school faculty practice plans are publicly accountable funds and, thus, whether the spending of such revenues by public medical schools should receive increased state oversight and control. At issue is the degree to which states ultimately can require public medical schools to direct practice plan revenues for education in certain specialties or settings.

At least two states have examined this issue. Concerned that primary care programs within the state's medical school were experiencing significant financial difficulty, the Kansas Legislature in 1993 mandated an outside study to look at the efficiency of faculty practice plans. The study suggested that the medical school combine its several plans into a single foundation and reexamine its spending priorities. In 1996, Texas lawmakers were pressured to appropriate more funds for GME in a near budget-neutral climate. In order to make that possible, some family medicine educators advocated that either 1) Texas public medical schools and teaching hospitals reallocate current resources for non-primary care residency positions (including some portion of clinical practice plan revenues) to primary care training or 2) state funds to the medical schools be reduced by one percent, dedicating the funds to support the state's family practice training program.

[25] New York created the "Professional Education Pool" through which GME funding is collected and distributed. The amount of money in the Pool — $670 million in 2001 — will be reduced annually until 2003 when the legislature will re-examine the pool under the legislation's sunset clause. New York requires all payers to contribute to the fund, including Blue Cross and Blue Shield, commercial insurers, health maintenance organizations (non-Medicaid and non-Medicare), businesses, self-insured funds, and third party administrators. Payers can make payments two ways. First, the payer can voluntarily contribute directly to the fund based on an assessment on per covered life of the individuals or families covered by the plan. If the payer does not make the contribution directly to the fund, the payer will be assessed a surcharge on each payment for inpatient hospital services. The surcharge is based on a regionally determined equivalent assessment of inpatient costs plus a 24 percent differential. The hospital then sends the surcharge to the commissioner. The Pool monies are distributed to teaching hospitals on a monthly basis according to the hospital's adjusted share of a region's total GME spending. In addition, $54 million is distributed to teaching hospitals that meet specific training goals, such as increasing the proportion of primary care residencies and increasing the number of residents in underserved areas and ambulatory care settings. New York's statute also includes monetary penalty provisions if the private payer failed to contribute to the fund.

OPTIONS FOR FUTURE GME PUBLIC POLICY

Today's rapidly changing environment affecting physician training and practice necessitates that public policy on graduate medical education face rigorous examination and reform. Several options and opportunities exist for both the federal government and states to develop new GME approaches and policies for the twenty-first century. Some of these options and opportunities are briefly presented below:

- **Strengthen efforts to effectively forecast and distribute data on physician supply and demand, both nationally and on a state or regional basis.** Recent developments and research noted in this report have posed new questions and renewed debate about the composition and distribution of the physician workforce in the United States, whether an overall surplus of physicians exist, and consequently the impact of these developments on GME. Further study by COGME and others suggest the need for public policy to expand the collection and distribution of data on physician supply and demand, as well as to effectively renew health workforce planning as a priority. Significant differences and issues in physician supply and demand exist across the country; accordingly, such policy efforts should actively occur at and between the federal and state government level.
- **Institute effective mechanisms and incentives for holding recipients of public GME subsidies more accountable for producing publicly needed "goods."** The major public payers of GME — Medicare and Medicaid — have done little to require teaching programs to document their need for GME subsidies. Certainly, the lack of accurate information about the actual cost of GME and the illogical historical variation by teaching institution that exists in Medicare's per resident payments persists. Moreover, the problematic linkage between education and service delivery in GME payments perpetuates the difficulty of teaching hospitals in reconciling teaching expenses and their ability to shift costs to cover uncompensated care and research. Teaching institutions produce these public goods typically as a joint product of GME and finance them through a labyrinth of cross-subsidies.

Although these cost-accounting issues have not been resolved, public policymakers have other means at their disposal to influence performance of training programs. For example, several state Medicaid programs now want GME payments to reflect their larger desire for managed care programs to be more efficient and accountable to patient needs. A few of these programs — with approval from the Health Care Financing Administration — have developed innovative approaches to payment for GME that target achievement of specific physician workforce goals. Differential payments by specialty or payments to non-hospital entities may be used, for example, to address such goals. Performance criteria typically include incentives for and measures of greater accountability in distributing GME payments. GME payments may be used to motivate training relative to performance standards, monitoring performance, and using the payments system to reward those who adhere to the standards and penalize those who do not. Such state models should be acknowledged and fostered by the federal government as sound Medicaid GME policy. They also can serve as suitable alternatives or lessons learned that could be applied to Medicare GME policy.

Additionally, Medicare and Medicaid programs should set aside a certain proportion of funds outside of the direct reimbursement process to reward special GME projects and programs that use innovative approaches to achieving specific workforce priorities or supporting community training programs in medical shortage areas.

- **Develop a more stable and equitable means for financing GME through the creation and demonstration of an all-payer GME fund.** Graduate medical education is commonly viewed as a "public good[37]" that benefits the entire country, and there is a growing consensus that all health care payers should share the costs of GME. Medicare has long been the primary explicit contributor for graduate medical education, despite the fact that Medicare patients are not the only beneficiaries of GME. With increased pressures being placed on major public GME payers to be more prudent buyers of health care, an explicit funding mechanism(s) that would support physicians and other health professions who perform certain socially desirable missions would help to ensure their continued viability. Under such an arrangement, the pooling and distribution of support could be tied more directly to the missions performed, rather than to the policies of a specific payer.

  Initially, federal policymakers could ensure adequate funding by establishing an independent GME trust fund. The trust fund could be financed by appropriations from general revenue. Eventually, an "all-payer" pool, funded explicitly by public and private insurance providers, could be demonstrated. The all-payer pool would ensure that those who currently benefit from medical services would be required to bear the cost of educating the physicians. Establishing such an initiative at the federal level currently does not look promising. States may benefit to a greater extent by implementing their own all-payer system because they can link distribution mechanisms directly to their own unique workforce needs.

- **Assure adequate funding to support innovative physician training in non-hospital and medically underserved settings.** Most experts contend that the majority of physicians practicing outside of hospitals must be equaled by a greater percentage of GME taking place in such settings in order to ensure that future physicians receive adequate preparation for practice. While a number of recent developments are supportive of increased training in ambulatory settings, these have not been sufficient to encourage a significant shift in training to these settings. Beyond what was enacted by the BBA, greater financial incentives — in the form of additional funds for GME payments that cover the full (direct and indirect) and often higher costs of training in ambulatory and community-based settings — are needed for Medicare to effectively encourage and sustain development of such training programs. Such incentives, for example, might encourage teaching hospital participation in academic-community partnerships and consortia located in health professional shortage areas, or help hospitals off set losses incurred through residency caps and reduced indirect Medicare GME payments brought on by the BBA.

[37] Public good may be defined as a good or service that benefits the public at large and will not be produced at the appropriate level in the private market because of difficulty in pricing it. Although the community at large, including future patients and physicians, benefits from medical education, it is impossible to charge future beneficiaries.

U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, National Center for Health Workforce Information and Analysis

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